Klamath Network Featured Creature
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Howell's alkali grass (*Puccinellia howellii*)

FIELD NOTES:

General Description:
Howell's alkali grass is one of eight *Puccinellia* species native to California. In 1954, J. Howell collected specimens that did not seem like any known alkali grass. It was not until 1990 that J. Davis recognized it as a unique species and named it after Howell. *P. howellii* is a perennial grass, with 1.5 -2 mm wide inrolled leaves on the stem. The flowering stems are erect and 7 – 40 cm tall. The grass' flower clusters are 2 - 7 cm wide and found on the lower branches. The area around the spikelets varies from smooth to rough to the touch.

Ecology:
This alkali grass is a short-lived perennial and obligate wetland species. Morphologically, *P. howellii*'s closest relatives are in coastal marshes from Alaska to Washington, rarely reaching California. The majority of *P. howellii* occurs in monotypic stands. The species cover ranges from sparse individual tufts to dense turf-like growth. There is a high degree of genetic variation among *P. howellii* individuals, which is unusual for a species with such a small population.

Growth and Reproduction:
P. howellii's seed germination depends on the summer salinity level. The surface flow salinity over the seeds directs whether they germinate as early as mid-summer, as late as November, or never at all. Mature plants can tolerate higher salinities than the seedlings. Plants rooted in areas with water averaging about half as salty as sea water exhibit the best growth. When mature, the plants range from 2.5 to 20 cm or taller. Howell's alkali grass flowers between April and June and bears fruit in June and July.

Where to see it in the Klamath Parks:
There is only one place on Earth to see this species! Whiskeytown National Recreation Area is the only location where Howell's alkali grass is known to occur.

Habitat and Distribution:
Most *Puccinellia* occur in saline, neutral pH soils of the Northern Hemisphere, and *P. howellii* is no different. What makes it unique is that it is found only in a complex of three mineral seeps in Shasta County, CA. At an elevation of 500 m, these three springs produce alkaline groundwater that becomes neutral to acidic as it flows from the discharge points. The area is also high in calcium. *P. howellii* is strongly associated with these discharge sites. Howell's alkali grass shares its environment primarily with salt grass (*Distichlis spicata*). These sites also serve as a natural salt source for local wildlife, such as the black-tailed deer and the band-tailed pigeon.

Status and Threats:
The CA Native Plant Society lists *P. howellii*'s status as 1B ("rare, threatened, or endangered in CA and elsewhere") and the US Fish and Wildlife Service considers it the northern California species at greatest risk of extinction. The State of CA has listed the springs where it occurs as a Significant Natural Area (SNA-41) "of considerable importance to wildlife." However, neither the species nor its habitat is currently protected by any formal legal status. The entire population is within meters of a major road, causing concern over impacts to its habitat and future.

Additional Information:
For more information on *Puccinellia howellii*, please visit:
The USDA PLANTS Profile or
The CalFlora Taxon Report